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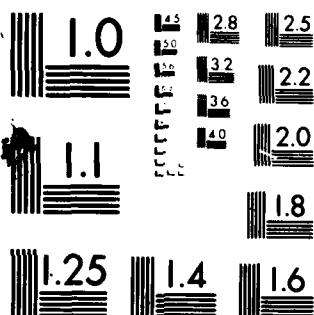
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Naval Studies Group

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NAVY QUALITY OF LIFE AND REENLISTMENT

by

JEAN W. FLETCHER

↓ The military services have devoted much attention in recent years to improving the quality of military life. Quality of life (QOL) is a broad term used to describe the non-monetary aspects of military living and working conditions. Housing, recreation, counselling, and medical services are examples of QOL-related programs. The research reported here examines the extent to which the quality of life of Navy enlisted personnel affects their reenlistment decisions. Identification of areas of discontent that adversely affect reenlistments can provide guidelines for efficient allocation of QOL program funds, and point out alternatives to compensation for increasing reenlistment rates.

To identify QOL problem areas, the attitudes towards Navy jobs and life and the individual characteristics of first-term and career enlisted personnel were related to their reenlistment decisions. The following sections describe the data, the reenlistment model, and the results. Finally, the value of QOL research for reenlistment policy making is discussed and suggestions are made for additional analyses.

↑

DATA AND FACTOR ANALYSIS

The Navy Occupational Task Analysis Program (NOTAP) is a detailed survey of job tasks and attitudes toward the attributes of Navy service. It is administered in six-year cycles to representative samples of personnel working in each Navy rating. We obtained NOTAP survey results for personnel in the hospital corpsman (HM), aviation electricians mate (AE), aviation structural mechanic (AM), aviation electronics technician (AT), aviation antisubmarine warfare operator (AW), and mess management specialist (MS) ratings. These ratings covered a range of technical and non-technical jobs and had relatively recent NOTAP surveys and adequate sample sizes. AEs and AMs were grouped. ATs and AWs, who are generally in higher mental categories, better educated, and receive larger bonuses for reenlisting, were grouped.

For each rating group, table 1 shows the attributes with which 20 percent or more of the NOTAP respondents were dissatisfied. Job pressure, duty station choice, pay, and housing were major sources of discontent across all ratings and terms of service.

Enlisted Master Records (EMRs) are the Navy's principal storehouse of information on enlisted personnel. Quarterly EMR extracts, looked at in series, were used to trace the career history of enlistees and

TABLE 1

NAVY QOL ATTRIBUTES WITH HIGHEST NOTAP DISSATISFACTION RESPONSES

NOTAP ITEM	First-Term			Career			
	HM	AE/AM	AT/AW	HM	AE/AM	AT/AW	MS
Recognition for work done	*	*	*	*	*	*	
Prestige and status			*				
Freedom from job pressure	*	*	*	*	*	*	*
Frequent job changes within activity							*
Formal school training					*		*
Comfort of work surroundings		*					
Utilization of gov't money	*	*	*	*	*	*	
Utilization of gov't material			*			*	
Utilization of personnel	*		*	*		*	
Stability of command schedule		*	*		*	*	
Choice of duty station location	*	*	*	*	*	*	*
Present duty station	*			*			*
Choice of duty type		*	*		*	*	
Time on TAD/TDY	*			*			*
Pay allowances	*	*	*	*	*	*	*
Adequate BEQ/barracks	*	*	*	*	*	*	
On-base housing	*	*	*	*	*	*	*
Shipboard living spaces		*	*		*	*	*
Navy Exchange/PX/Ship's store					*	*	
Medical services		*			*		
Medical services for dependents		*			*	*	*
Retirement plan					*		
Length of sea tour			*			*	

provide demographic data. NOTAP data was merged with the EMR history data to allow an analysis relating expressed attitudes toward Navy jobs and life to subsequent reenlistment decisions. (A detailed description of both EMR and NOTAP data is contained in reference 1.)

Because of the unwieldy number of NOTAP survey items (attitude responses toward 37, 67, and 65 Navy life characteristics for the HM, aviation, and MS ratings, respectively) and the high correlation among many of these items, factor analysis was employed to reduce the data to manageable proportions. (A description of factor analytic techniques is contained in reference 2.)

Factor analysis is a statistical technique for identifying common relationships among data items and condensing this information into a smaller number of variables. We identified 22 factors from the responses to 67 NOTAP survey questions. Each factor captures the common variance of the variables upon which it is based and, by construction, is uncorrelated with any of the other factors. These QOL factors divide quite naturally into two broad categories, satisfaction with the job and satisfaction with military life, and are displayed in table 2. These factors, weighted linear combinations of survey items, were used in our reenlistment model. While factors were constructed separately for each rating, the results across rating were similar and intuitively appealing.

TABLE 2

QOL FACTORS

QUALITY OF MILITARY JOB FACTORS

- Training Opportunities
- Physical Work Environment
- Meaningful Work
- Team Effort
- Relations with Supervisors
- Relations with Co-workers
- Relations with Subordinates
- Faith in the Organization
- Adequate Tools
- Skill Utilization
- Autonomy
- Personnel Utilization
- Recognition/Prestige

QUALITY OF MILITARY LIFE FACTORS

- Housing
- Deployment Time
- Duty Assignment Choice
- Work Schedule (Home)
- Work Schedule (Deployed)
- Medical Services
- Family Services
- Career Support Services
- Barracks/Ship Habitability

REENLISTMENT MODEL

Two aspects of reenlistment patterns that influenced our choice of reenlistment model are illustrated in table 3. First, as expected, reenlistment behavior differs dramatically between first-term and career personnel. For each rating except MS (whose sample size was too small), we performed separate analyses of first-term and career reenlistments.

Second, a strikingly large number of personnel extended their term of service rather than reenlist. Since extending may not express a career commitment, we maintained a separate decision category for extenders.

TABLE 3
SAMPLE REENLISTMENT DECISION FREQUENCIES

<u>Rating (Cases)</u>		<u>% Leave</u>	<u>% Extend</u>	<u>% Reenlist</u>
HM	First (2042)	79	8	13
	Subseq (726)	39	20	42
AE/AM	First (949)	82	9	9
	Subseq (464)	35	40	25
AT/AW	First (536)	72	11	17
	Subseq (308)	30	59	11
MS	All Terms (417)	44	18	38

At the end of each obligation period, then, Navy enlisted personnel leave active military service, extend for one or more years, or reenlist. (We considered extensions of less than one year delayed decisions and did not included them in the sample.) A multinomial logit model can be used to estimate the probability of making each of these choices.

We want to estimate

$$P_1 = \frac{e^{\beta_1 x}}{e^{\beta_1 x} + e^{\beta_2 x} + e^{\beta_3 x}},$$

where $i = 1$ (leave), 2 (extend), or 3 (reenlist), and where P_i = probability of making choice i . Here, x is a vector of individual characteristics, including quality of military life and job factors. Thus three equations are generated through estimation of this model -- one describing the probability of each choice. Maximum likelihood techniques were used to obtain estimates of the β coefficients for each of these choices.

MODEL ESTIMATION RESULTS

Summary results by rating group and term of service are shown in tables 4 and 5. (Detailed results for demographic and other control groups, as well as actual logit coefficients, are contained in reference 3.)

Pay is shown to be consistently important in retaining first-term personnel, but job factors are also important. Different factors are significant for different ratings, but this is not surprising given the diversity of job content across ratings. In general, the job factors are rather intangible, representing facets of the job that can usually be improved through effective leadership and personnel management. In

TABLE 4

**FACTORS THAT MAKE FIRST-TERM
EXTENSION OR REENLISTMENT MORE LIKELY**

	<u>HM</u>	<u>AT/AW</u>	<u>AE/AM</u>
Pay and advancement	X	X	X
Quality of job factors:			
Training opportunities			
Physical work environment			
Meaningful work		X	X
Team effort			
Relations with co-workers	X		
Relations with subordinates			
Faith in organization	X		
Adequate tools			
Skill utilization			
Autonomy	X		X
Personnel utilization		X	X
Recognition/prestige	X		X
Quality of military life factors:			
Military housing			
Duty assignments/station			
Deployment time			
Work schedule (home)			
Work schedule (deployed)			
Medical services		X	X
Family services			X
Career support services			
Barracks/ship habitability		X	

TABLE 5

FACTORS THAT MAKE EXTENSION OR
REENLISTMENT BEYOND THE FIRST TERM MORE LIKELY

	<u>HM</u>	<u>AT/AW</u>	<u>AE/AM</u>	<u>MS</u>
Pay and advancement	X	X	X	
Quality of job factors:				
Training opportunities		X	X	
Physical work environment				
Meaningful work	X			X
Team effort	X			
Relations with co-workers				
Relations with subordinates				
Faith in the organization		X		X
Adequate tools				
Skill utilization				X
Autonomy		X		
Personnel utilization		X		
Recognition/prestige	X	X		X
Quality of military life factors:				
Military housing		X	X	
Duty assignments/station	X	X	X	X
Deployment time	X			X
Work schedule (home)				
Work schedule (deployed)				
Medical services			X	X
family services				
Career support services				
Barracks/ship habitability		X		

contrast, military life factors are potentially easier to quantify. With few exceptions, however, the quality of military life factors are not significant determinants of first-term reenlistment. While enlisted personnel are relatively dissatisfied with items that comprise the military life factors, this dissatisfaction does not differ substantially for those who leave vice those who extend or reenlist.

A somewhat different picture emerges for career personnel. Pay, again, is generally important, and some job factors are significant. However, the quality of military life factors increase in importance. Duty station choice is important across ratings, housing for aviation ratings, and medical services for half of the rating groups. The Navy has been spending money in these areas, and our findings suggest that the reenlistment benefit is greatest for career personnel.

IMPLICATIONS FOR REENLISTMENT POLICIES

Our QOL analysis has shown that pay is important in reenlistment decisions, that the intangible quality of job factors affect decisions for both first-termers and careerists, and that some potentially manipulable military life factors affect career decisions. These results are interesting and lend promise to the idea of reenlistment payoffs to QOL programs, particularly for the critical careerists. However, more work is needed. To make optimal decisions about QOL spending as a reenlistment tool, the military factors need to be quantified. Knowing that

increasing satisfaction with duty choices will increase reenlistment is not sufficient — we need to know the cost of increasing this satisfaction.

Promising avenues exist for achieving this goal. The first involves devising a QOL-specific survey. The NOTAP survey was designed primarily as a task analysis data source that included scaled job satisfaction items. In a survey specifically designed to evaluate QOL program alternatives, actual data (such as number of moves, deployment times, housing type and cost, and labor force status of spouse) could be obtained. Such data would allow direct estimation of reenlistment gains from QOL changes, and these could be compared to the costs of the changes.

Alternatively, a piecemeal approach of data collection for specific QOL areas could be followed. Examples of potential projects include evaluation of programs that allow people to choose their duty station and development of individual deployment history data for relating sea duty to reenlistment probability.

In summary, the use of pay to increase reenlistments is once more justified, but other non-monetary aspects of military jobs also affect reenlistments. There remains the task of quantifying the cost of increasing reenlistment rates by improving the quality of Navy life. Accomplishing this would allow the Navy to design a total compensation

package that achieves the necessary level of retention as efficiently as possible.

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